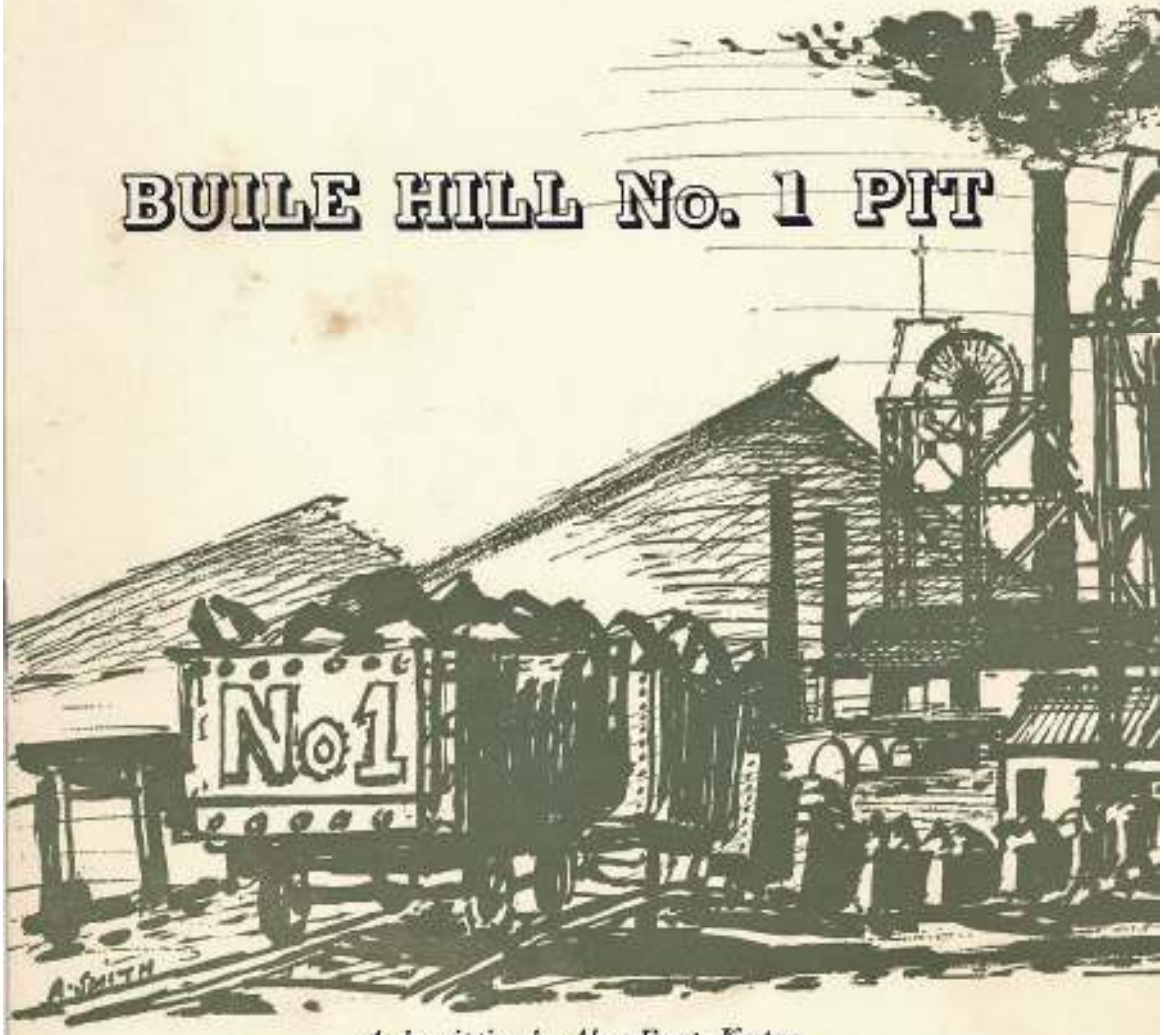
CITY of SALFORD

SCIENCE MUSEUM

BUILE HILL PARK

BUILE HILL No. 1 PIT



A description by Alan Frost, Keeper

PRICE SIXPENCE

"Buile Hill No. 1 Pit" was constructed with the large-scale co-operation of the National Coal Board (North-West Division). The Salford Corporation Art Galleries, Museums and Libraries Committee expresses its warmest thanks to Colonel Bolton, Chairman of that Board, and his colleagues and to all those who assisted in its presentation.

It is open to the general public from 2 to 5 p.m. each day from 1st April to 30th September when a guide is available and at other times by arrangement with the Keeper who gives talks upon it and the museum in general.

A post-card illustration of the Pit and a leaflet upon "The Story of Coal" are obtainable from the attendants.

A. FRAPE,
Director of Museums and Art Galleries
April 1958

"BUILE HILL No. 1 PIT"

Buile Hill No. 1 Pit is made up from a series of small sections as found in a working coal mine. It has an old type of working devoid of mechanisation; a present-day type of working with cutter, conveyors and other modern apparatus; a section illustrating the method of shot firing for driving a roadway; and finally some old methods of roof support where timber is used to make arches to serve the same function as do the steel arches of today.

In viewing this model coal mine it should be imagined that one is visiting a colliery and that the gate at the head of the stairs represents the gate of the colliery yard.

From the gate one passes across the yard to the pit-head and in doing so one sees a safety poster designed to prevent accidents in the mine. Many of these posters are based upon miners' suggestions. Nearer to the shaft is a NO SMOKING notice which is perhaps the most important sign in any coal mine. Everyone descending has to be searched for cigarettes, matches and lighters since such materials might lead to an explosion. At this point one would be expected to be wearing a helmet and cap lamp otherwise permission to descend would not be granted.

Passing through the sliding door the pit-head is entered and the cage, waiting to descend, is seen. The telephone in the corner is in direct communication with the pit-bottom and the triangular handle on the box near the cage is pulled to signal to the winder. A code of signals is used according to the explanatory notice alongside. The signal will inform the winder whether men or tubs, etc. are travelling in the cage. The distance travelled in this particular cage is very short and the movement very slow in comparison with the distance and speed at which one would descend into a real mine.

Upon leaving the cage after descending to the pit-bottom it should be realised that the actual coal face could be a mile or more away. One now sees the telephone linking up with the pit-head and another Code of Signals notice. At this stage the cap lamp would be checked to ensure that it was working correctly, for in the event of a failure its wearer would not be allowed to

proceed. The doors leading away from this area deserve special attention for they play a very important part in mine ventilation. A colliery has two shafts — one a "downcast" and the other an "upcast". Air is circulated in a pit in such a manner that it passes down the former and is drawn up the latter. The air from the downcast shaft, just left, is pressing on these doors keeping them closed until needed and thus controlling the flow of air. The doors are set out of line so that they become self-closing. It will be noticed that all the doors in the mine are hinged in the same manner.

Passing through the door opposite the cage exit is the old type of pit-working where coal was obtained by hand. The miner did not always work thin seams lying on his side, for in Lancashire there are seams up to 7 feet thick. All the seams in this mine are 5 feet 6 inches thick. The roof has the old method of support in which a notch was cut in the bar and a corresponding cut made in the prop. It is also supported by pack walls made of stone found in the workings and these are to be seen on either side of the roadway. The tubs in this section are of a standard pattern but the gauge of railway, known as the Bridgewater Gauge, is peculiar to this area of the South Lancashire Coalfield which, incidentally, is one of Britain's largest and Salford is situated on its boundary. An interesting point about the coal tubs is that they were spun around corners on a dampened steel plate and not pushed along a curved rail for such would take more space and involve considerable work. At the time of this type of working there was no electric light in the mines and the only illumination for the miner came from his Davy Lamp which gave just a little more light than a candle.

Leaving the old section one passes into a modern roadway which, in marked contrast, is very high, wide and light. The steel arches are known as "ring girders" and these are covered here by corrugated iron. Sometimes squares of wood or wire mesh are used and at other times they have no covering at all, the type of covering depending upon the nature of the rock to be supported and other prevailing conditions. Beyond the "ring girders" are the rock roof, coal face, face conveyor, coal

cutter and gate conveyor. The rock roof is removed as the coal face penetrates deeper into the mine and a new section of "ring girder" is added as space is made for it. Supporting the roof until a new "ring girder" is in place are three horse-heads and timbers. These are the H section girders projecting from the end of the roadway. The taking out of the rock is known as ripping and there may be a single or a double ripping as shown here. Each ripping is supported by props. In the background, running to the left, is the coal face.

The coal cutter, known as an AB Fifteen, is mounted on the bed of the face conveyor which, in this case, is a scraper chain conveyor, and the beam or cutting part of the machine is in a "stable". It is in position to start to cut and, when in action, it will pull itself through the coal by means of the hawser which is anchored at the end of the face. Within the cutter the hawser passes through a series of pulleys which provide the means of movement.

The coal is first cut and then blasted down and loaded by hand on to the conveyor which carries it along the face to the gate conveyor which takes it down the roadway to be loaded into tubs some distance away.

As the coal face is cut and the coal cutter moves forward, the rearmost prop leap-frogs into a position next to the coal face and the accompanying link bar is also brought forward. At the same time the chock pack, which is a pile of wooden blocks, is also moved forward about 3 feet and the pack walls are extended.

To the left of the roadway may be seen the method of roof support as applied at the coal face. Here the white props, known as Dowty props, are hydraulic and can be raised or lowered in the same manner as a car jack. Supporting the roof on top of these props are link bars.

Opposite the coal face is the waste area or "gob" into which is thrown rock material from the ripping operation. On either side of the "gob" are pack walls built from adjoining stone as the face moves forward. In between the pack walls is the chock pack already mentioned.

From this point onwards in the mine, various methods of

roof support are displayed, all the timbers being Norwegian of varying sections. The first method is again prop and bar as seen in the old workings but here a different joint is used.

Between this and the next method is an arched roadway being driven through the rock. On the left-hand rock face are holes drilled ready for shot firing and marks in white paint indicate where further holes have to be drilled. The holes are numbered in groups and shots of the same number will be fired at the same instant. The numbers 0, 1, 2, 3, 4, will follow each other at half-second intervals. All the shots have a delay mechanism, are wired in series, and are operated by a single switch. The shots in the centre will explode first followed by the surrounding shots and then by the shots of the outer ring, each sequence having been assisted by the earlier explosions. In this manner the whole of the face will be dealt with in one operation. On the opposite face is a Hardy compressed-air drill which bores the shot holes.

One now enters the timbered roadway showing old methods of roof support. These may take different forms dependent upon local conditions but those shown exhibit some of the more interesting characteristics.

The double herring-bone method of support is first seen and the horizontal prop on top of the vertical prop should be noted for this is employed as a compression piece to take the impact of a gradually falling roof. This piece also allows props to become firmly wedged without splitting.

The next example is the single herring-bone with the props seated in the rock at the side of the roadway. This method is used in narrow roadways whenever the walls are strong enough but should they be weak, the top support rests on a prop as shown around the second corner.

The final example shows the roof supported by a stretcher bar let into the rock at either side of the roadway. This method is used where as much space as possible is required at floor level.

The tour is now completed and the cage is reached for ascent to the pit head.

The attention
of visitors is drawn to
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a full scale
reproduction of an old street to be seen
at the
MUSEUM and ART GALLERY, PEEL PARK

and to

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CITY of SALFORD

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